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ABSTRACT

Based on an empirical study of over 3,000 learning disabled children and on a review of research, the paper outlines intellectual, attention and verbal mediation, social-affective, and oral and written characteristics of learning disabled students. Among the findings reported are the following: the median educational retardation is one grade below the mental age reading grade expectancy; there may be a characteristic Wechsler Intelligence Scale for Children-Revised profile for the learning disabled group, but few individual learning disabled children actually conform to this pattern; children identified as learning disabled generally demonstrate a 2 or 3 year developmental lag in the ability to attend selectively; learning disabled children are less socially accepted and more unpopular than their peers; and learning disabled children are more deficient in nonmeaningful than meaningful aspects of language. (SB)

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Working Paper No. 296

CHARACTERISTICS OF LEARNING DISABILITIES: A SELECTIVE REVIEW

by

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WISCONSIN RESEARCH AND DEVELOPMENT
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Characteristics of Learning Disabilities: A Selective Review

Sara G. Tarver

An empirical study of the characteristics of over 3000 children enrolled in Child Service Demonstration Centers for learning disabilities in 21 states revealed the following demographic characteristics (Kirk & Elkins, 1975):

1. Most of the children were in the lower elementary grades.
2. The sex ratio was three boys to one girl.
3. Approximately two-thirds of the children were referred because of reading problems.
4. The median educational retardation was one grade below the mental age reading grade expectancy.
5. Retardation in arithmetic was one-half grade less than the retardation in reading and spelling.
6. The IQ distribution revealed a larger proportion with below average IQ than is found in the general population.

The remainder of this review covers research investigating the intellectual, attention and verbal mediation, social-affective, and language characteristics of learning disabled children.

Intellectual Characteristics

Studies investigating the WISC, WISC-R, and WPPSI profiles of learning disabled children were reviewed and assessed in terms of the following hypotheses:

1. The learning disabled exhibit a high Performance - low Verbal IQ pattern.

2. The learning disabled exhibit a characteristic subtest profile,
3. The learning disabled exhibit greater subtest scatter or variability than do their nondisabled controls.

Is High Performance IQ - Low Verbal IQ Characteristic of Learning Disabled Children?

Eleven studies were identified in this category and only three supported the hypothesis that high Performance IQ, low Verbal IQ is characteristic of learning disabled children (Anderson et al., 1976: Smith, Coleman, Dokecki, & Davis, 1977; and Zingale & Smith, 1978). Three other studies suggest that discordance between the Verbal and Performance IQ's is as likely in normal learners as in disabled learners (Ackerman et al., 1971; Hagin et al., 1971; and Miller et al., 1978). One other study compared the Verbal and Performance IQ's of an educationally handicapped and an EMR group and did not find significant within group differences (Keogh & Hall, 1974).

Four studies did not directly investigate Verbal-Performance differences. These studies identified three Verbal-Performance patterns; a high Verbal IQ - low Performance IQ group; a high Performance IQ - low Verbal IQ group; and a Verbal IQ approximately equal to Performance IQ group. A high Verbal - low Performance pattern tended to be associated with better achievement in reading or reading-related skills that either the high Performance - low Verbal or Verbal equals Performance groups (Reed, 1967; Rourke et al., 1971; Rourke et al., 1973, and Rourke & Finlayson, 1978).

Do Learning Disabled Children Exhibit a Characteristic WISC(-R) Profile?

The studies reviewed generally provided support for Bannatyne's (1968, 1974) four-item recategorization although there is some evidence that the WISC-R may be composed of as many as five factors (Vance et al.,

1978). Most of the evidence suggests a subtest profile of good performance on Picture Completion, Block Design, and Object Assembly subtests and poor performance on Arithmetic, Digit Span, Coding, and Information subtests. However, Vance et al. (1978) argue that there is not a single characteristic profile for learning disabled children. They provide evidence that the WISC-R performance of LD children may conform to as many as five profiles. Even within these five subgroups, however, there is a tendency for the Arithmetic, Digit Span, and Information subtests to be relatively low.

Huelsman's (1970) conclusion of ten years ago -- that there may be a characteristic WISC(-R) profile for the learning disabled as a group, but that few individual learning disabled children actually conform to this pattern -- still appears to be valid. Therefore, differential diagnosis should not be based on patterns of WISC(-R) protocols may, however, be useful in generating remedial hypotheses (Vance et al., 1979).

Do Learning Disabled Children Exhibit More WISC(-R) Subtest Scatter Than Normal Learners?

Five studies were identified which investigated WISC(-R) subtest variability in disabled learners. Two compared the subtest variability of learning disabled subjects to the WISC(-R) normative data (Anderson et al., 1976; Tabachnick, 1979) and only Tabachnick reported more scatter in the learning disabled group. The only study comparing subtest scatter in an LD group to that of a normal control group reported equal scatter in both groups (Ackerman et al., 1971). Gajar (1979) reported that an LD group produced more subtest variability than either an emotionally disturbed or an educably mentally retarded group. A study comparing the

subtest scatter of an LD group and a group of normal, low achieving controls found no difference (Ysseldyke et al., 1980). The assumption that learning disabled children exhibit significant performance variability on the WISC(-R) has not received much support from existing research. Few studies have actually investigated this question and the results of these are inconclusive. Additionally, fluctuations of WISC(-R) subtest scores may be common in normal learners (Kaufman, 1976).

Attention and Verbal Mediation

Attention problems (e.g., hyperresponsiveness, distractibility, selective attention) have been assumed by many theorists to be the central problem of learning disabled children (Tarver, in press; Tarver & Hallahan, 1974). Selective attention, in particular, has been the topic of much recent research. Ross (1976) contends that a lag in the development of selective attention accounts for many of the cognitive deficits of learning disabled children. The most extensive body of research in this area has been conducted by Hallahan and colleagues at the University of Virginia Learning Disabilities Research Institute (Hallahan, 1978). While they initially focused on the study of selective attention (Hallahan, Kauffman, & Ball, 1973, 1974), they later incorporated verbal mediation into their research (Dawson, Hallahan, Reeve, & Ball, 1980; Hallahan, Tarver, Kauffman, & Graybeal, 1978; Tarver, Hallahan, Cohen, & Kauffman, 1977; Tarver, Hallahan, Kauffman, & Ball, 1976). In summarizing that research, Hallahan and Reeve (1980) stated:

1. Children identified as learning disabled generally demonstrate about a two or three year developmental lag in the ability to

attend selectively.

2. One of the primary reasons learning disabled children do poorly on tasks of selective attention is that they are deficient in the application of strategies to learn. In particular, compared to normal peers, they often do not apply verbal rehearsal strategies to tasks requiring selective attention.
3. The deficiency in the use of verbal rehearsal strategies can be overcome by specific training in these skills. In other words, when instructed to rehearse verbally, the selective attention performance of learning disabled children equals that of normal controls (p. 3).

Further evidence of a developmental lag in selective attention has been reported by Pelham and Ross (1977). A deficit in the application of verbal rehearsal strategies has been documented by several investigators using a variety of serial memory tasks (Bauer, 1977a,b; Swanson, 1977; Torgeson, 1978-79).

Social-Affective Characteristics

Studies conducted by Tanis and James Bryan and their colleagues at the Chicago Institute for Learning Disabilities (Bryan & Eash, 1978) have provided a substantial body of information about the social-affective characteristics of learning disabled children -- their interactions with peers and teachers, their self-concepts, and their causal attributions.

Bryan's (1974a,b; 1976) findings that learning disabled children are less socially accepted and more unpopular than their peers are consistent with those of other studies (Bruininks, 1978a,b; Siperstein, Bopp, & Bak,

1978; Siperstein & Gottlieb, 1977). Several possible sources of this rejection have been suggested:

1. Learning disabled children's inaccurate comprehension of nonverbal communication (Bryan, 1977) can lead to rejection by others. Wiig and Semel (1976) also attribute learning disabled children's poor social perception to deficiencies in the interpretation of everyday expressions of affect and attitudes through facial expressions, gestures, caresses, or touches.
2. Learning disabled children's expression of nonverbal communication may also contribute to their rejection. Bryan, Sherman, and Fisher (1980) found that their smiling and looking behaviors differed from those of their peers and Bryan and Perlmutter (1979) found that learning disabled children were devalued by strangers after only a few minutes of observation.
3. Learning disabled children's poor verbal skills may also elicit rejection. This is suggested by findings that the learning disabled, relative to their nondisabled peers, (a) emit more nasty statements to peers (Bryan & Bryan, 1978), (b) make fewer helpful and consideration statements (Bryan, Wheeler, Felcan, & Henek, 1976), and (c) fail to modify the form and content of their speech in accordance with what the listener is presumed to know (Bryan & Pflaum, 1978).
4. Learning disabled children's inferior role-taking skills (Wong & Wong, 1980), i.e., their difficulties with putting themselves in another's place and seeing things from a perspective different from their own, may lead to rejection by others. Bachara (1976) also found learning disabled children to lack empathy.

5. Learning disabled children's abilities in areas other than academics may interact with their "smartness" to determine their social acceptability. Siperstein and Gottlieb (1977) found that learning disabled children who were viewed as good athletes had a greater chance of being accepted socially. Conversely, it may be that poor athletic ability exacerbates the learning disability.

6. Learning disabled children's school placement may have an affect upon self-concept, which, in turn, may affect their popularity. Ribner (1978) compared the self-concept scores of learning disabled children in full-day special classes to those of learning disabled children in full-day regular classes who had been recommended for, but not yet placed in, special classes. The scores of the children in the regular classes were significantly lower than those of the children in the self-contained special classes. Smith, Dokecki, and Davis (1977) found that the self-concept scores of learning disabled children in self-contained classes were equivalent to those of nondisabled children in regular classes, providing further support for the view that special class placement has a positive effect on learning disabled children's self concepts. However, subsequent placement of the learning disabled children in a half-day mainstream condition increased their self-concept scores. A simulated full-day mainstream condition produced lower self-concept scores than those obtained in the half-day condition.

Regarding their studies of self concepts and causal attributions of learning disabled children, Bryan and Pearl (1979) stated:

> Learning disabled children are more likely than nondisabled children to have negative self concepts and to make causal attributions likely to lead to "learned helplessness." In addition, teachers and mothers hold little expectation that these children will improve academically across time. It appears that not only do learning disabled children have to cope with their own negative feelings about failure, the persons who provide important feedback about their performance are also likely to judge them as doing badly (p. 226).

Individuals with an internal locus of control view their successes or failures as contingent upon their own behaviors, whereas those with an external locus of control view their successes or failures as dependent upon factors external to themselves, e.g., fate, luck, chance. Bryan and Pearl's suggestion that children with learning disabilities are more likely to show learned helplessness is supported by studies showing that learning disabled children have an external locus of control (Hallahan, Gajar, Cohen, & Tarver, 1978; Pearl, Bryan, & Donahue, 1980); and accept the responsibility for their failures, but not for the successes (Pearl et al., 1980).

Oral and Written Language Characteristics

A review of the literature related to the oral and written language problems of learning disabled children led Tarver and Ellsworth (in press) to conclude the following regarding their reading disabilities:

> Learning disabled children are more deficient in nonmeaningful, than meaningful, aspects of language. The acquisition of decoding skills primarily involves nonmeaningful learning; the acquisition of vocabulary-concept knowledge (i.e., single word meanings) primarily involves meaningful learning. The learning disabled are deficient in decoding; they are not deficient in vocabulary-concept knowledge.

These decoding deficiencies were further linked to (a) failure to automatize decoding skills (Bateman, 1979; LaBerge & Samuels, 1974),

and (b) deficiencies in phonological awareness and/or phonological segmentation (Rozin & Gleitman, 1977). Automaticity of decoding skills (i.e., rapid, automatic processing which does not require conscious attention) is deemed to be an essential prerequisite to reading comprehension because this allows the reader to direct attention to meaning rather than to the decoding process itself. A conscious awareness of the segmentability of our phonological system is an essential prerequisite to the ability to segment spoken sentences in words and words into syllables and phonemes. Phonemic segmentation, in turn, is an essential prerequisite to the acquisition of phoneme-grapheme associations.

Regarding the oral language characteristics of learning disabled children and adolescents, Wiig, Lapointe, and Semel (1977) have posited two distinct deficit syndromes, one characterized by reductions in the knowledge and use of morphology and syntax and another characterized by deficiencies in speed and accuracy of word retrieval (i.e., "dysnomia"). Newcomer, Magee, and Adelman (1978) found that learning disabled children's performance on receptive subtests of the Test of Language Development (Newcomer and Hammill, 1977) was similar to that of their nondisabled peers, whereas their performance on the expressive subtests was lower than that of their nondisabled peers.

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